Canadian Forces
Project Land Force ISTAR

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Department of
National Defence

Intelligence, Surveillance, Target Acquisition and Reconnaissance

National Defence Défense nationale

Canada

Report Documentation Page

Form Approved
OMB No. 0704-0188

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1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
02 SEP 2003	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Canadian Forces Project Land Force ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance)	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Department of National Defence, Canada**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES
See also ADM001676, UAV 2002 Conference & Exhibition., The original document contains color images.

14. ABSTRACT

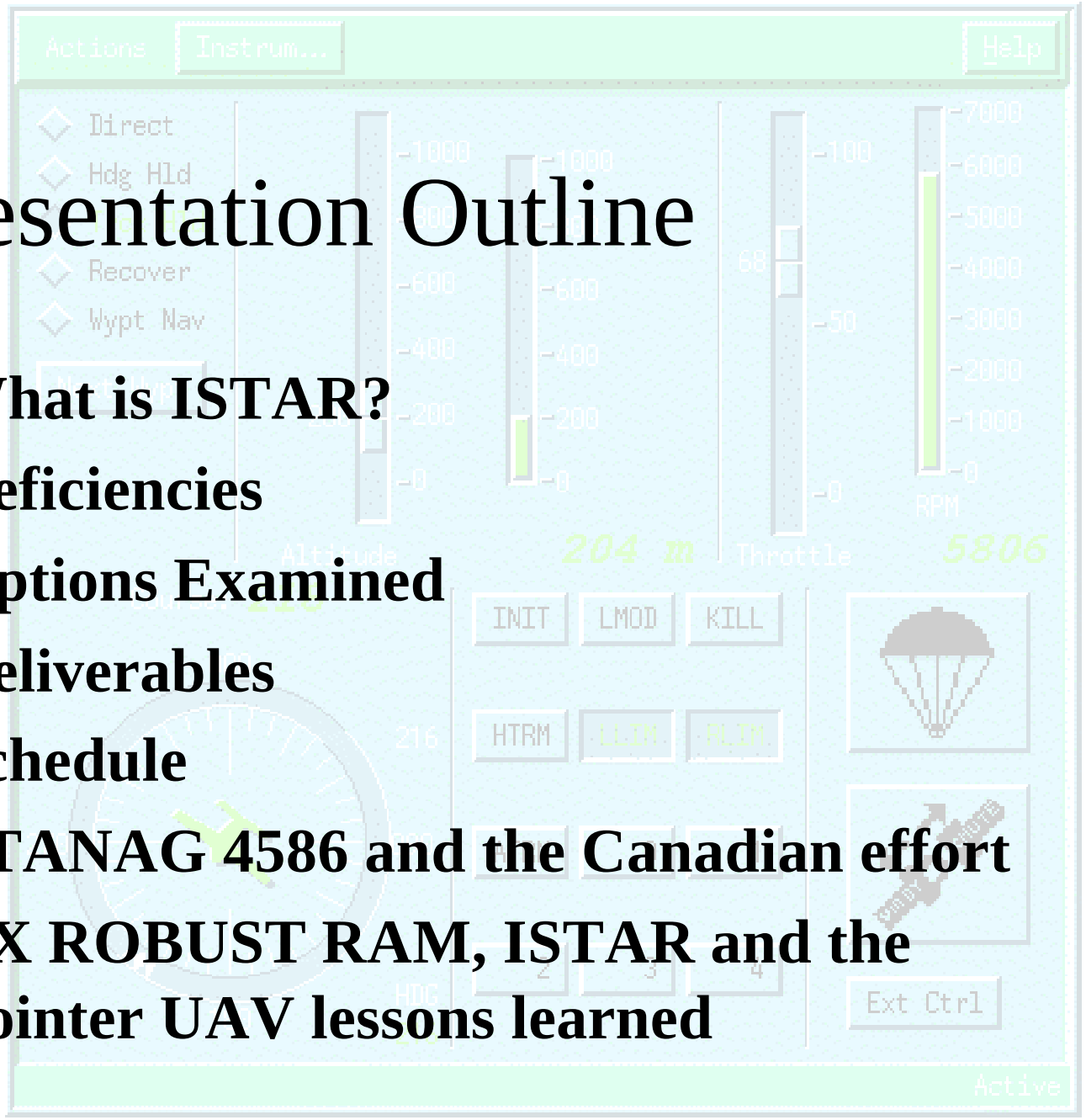
15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**UU**	**19**	

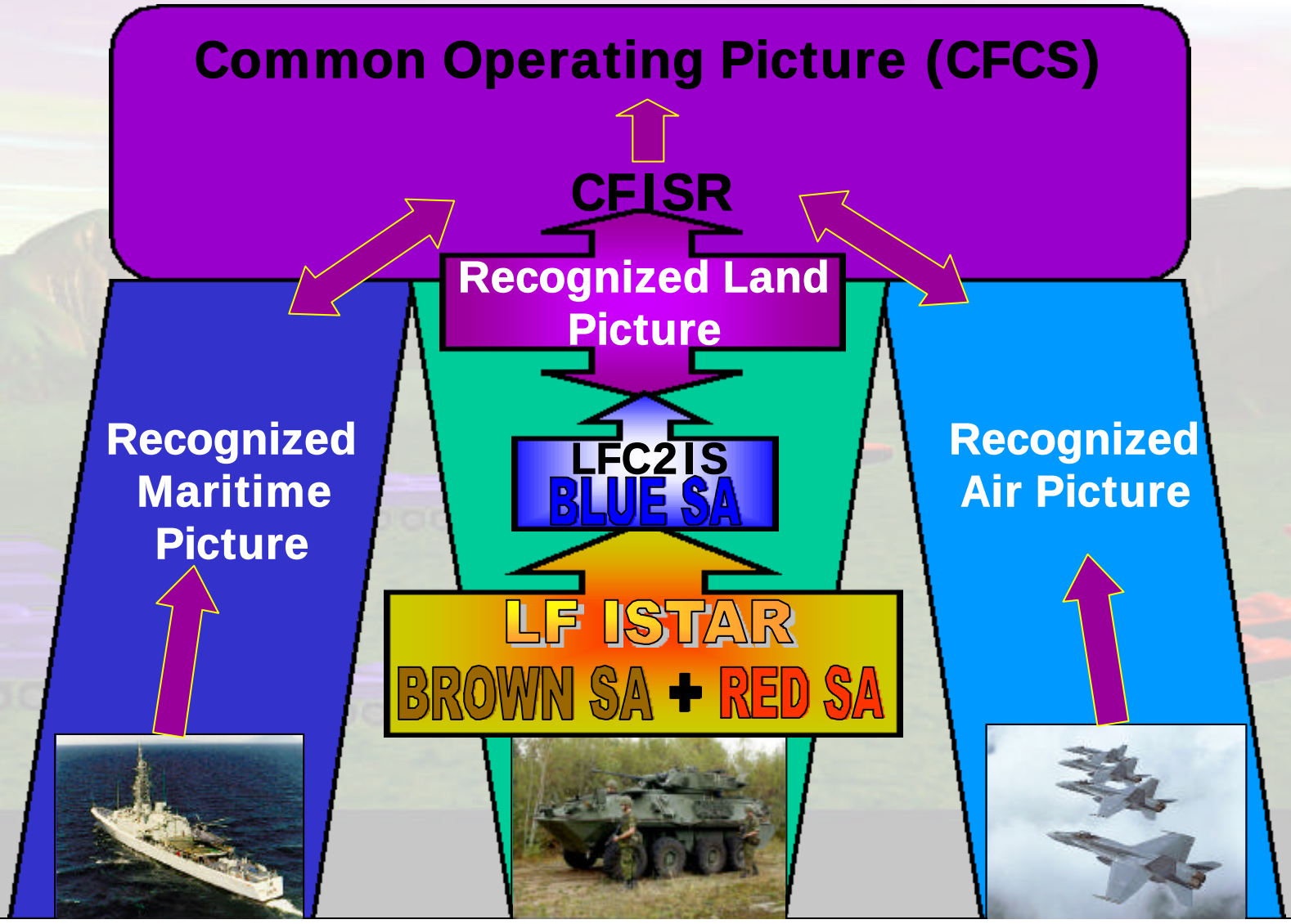
Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18

Presentation Outline

- **What is ISTAR?**
- **Deficiencies**
- **Options Examined**
- **Deliverables**
- **Schedule**
- **STANAG 4586 and the Canadian effort**
- **EX ROBUST RAM, ISTAR and the Pointer UAV lessons learned**



What is LF ISTAR ?



Capability Deficiencies

Communications	C2	Sensors
× Lack bandwidth to distribute data & information × **Can not download data from aerial vehicles**	× Limited, makeshift access to national & Allied ISR data × No tactical level reliability or repeatability for intelligence products × No tactical level ISTAR facility to support C2	× Existing general-purpose sensors not integrated × Limited capability of tactical EW sensors × **No capability to conduct reconnaissance beyond line of sight** × No capability to detect and locate source of hostile indirect fire

Project Phases

Identification	Options Analysis	Definition	Implementation
Identify capability deficiency	Formulate options Discard invalid options Assess benefits of remaining options Examine risk Decide which option should be pursued Development	Detailed review Risk assessment Costing of selected option Implementation planning	Implementation Implementation management Implementation monitoring Status Reports Operational Handover Close out

Options Examined

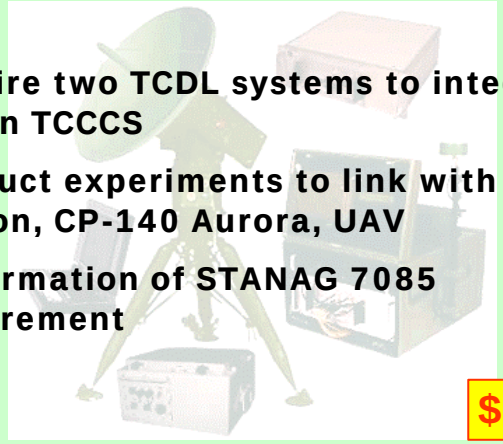
- Maintain Status Quo.
  - **Unacceptable** …
- Develop specific/custom tailored LF ISTAR components
  - **Not recommended** …. This would be a very risky venture requiring huge investments, research and development…**several years** of development.
- Acquire Commercial/Military-Off-the-Shelf components
  - **Preferred Solution** ….Technologies for information sharing, fusion and analysis are very mature within the commercial business and military industry.

Tactical UAV Sensors

- Develop concepts of operation in concert with the Command Support Pilot Project and CF Experimentation Centre
- Define possible payload requirements
- Continue validation of STANAG 4586

$2.5 M

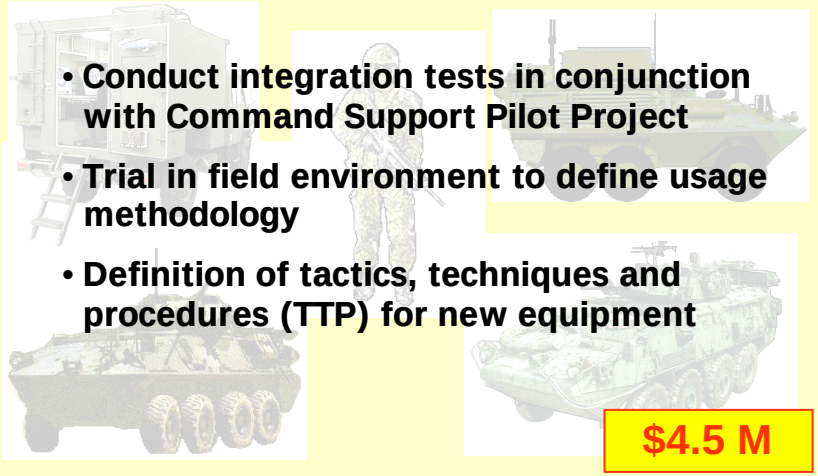
Tactical Common Datalink (TCDL)



- Acquire two TCDL systems to integrate within TCCCS
- Conduct experiments to link with ERSTA Griffon, CP-140 Aurora, UAV
- Confirmation of STANAG 7085 requirement

$2.6 M

Acquire Risk Reduction Units

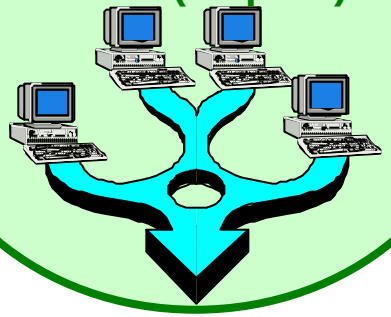
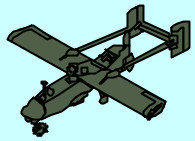


- Conduct integration tests in conjunction with Command Support Pilot Project
- Trial in field environment to define usage methodology
- Definition of tactics, techniques and procedures (TTP) for new equipment

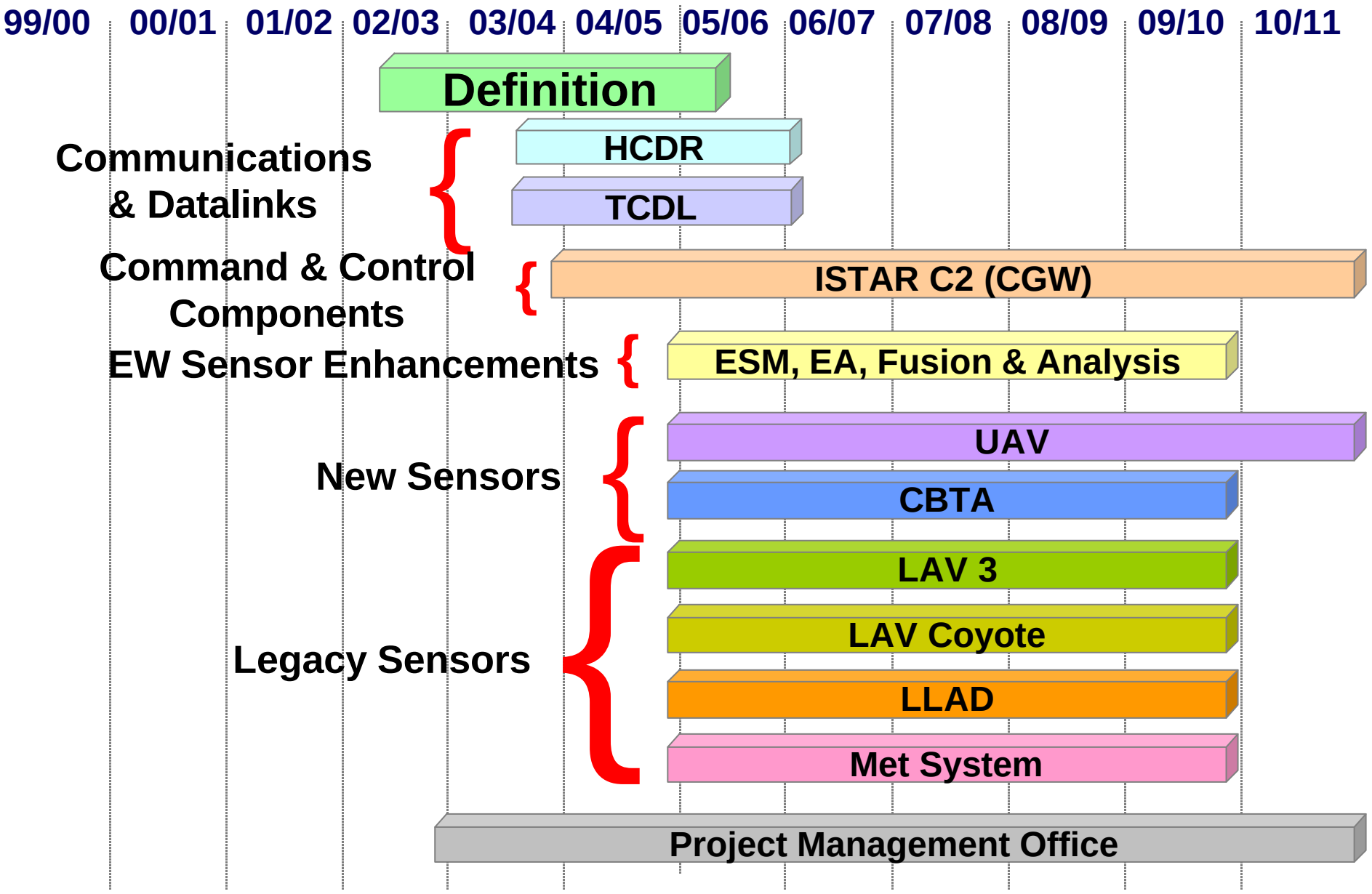
$4.5 M

Project Deliverables

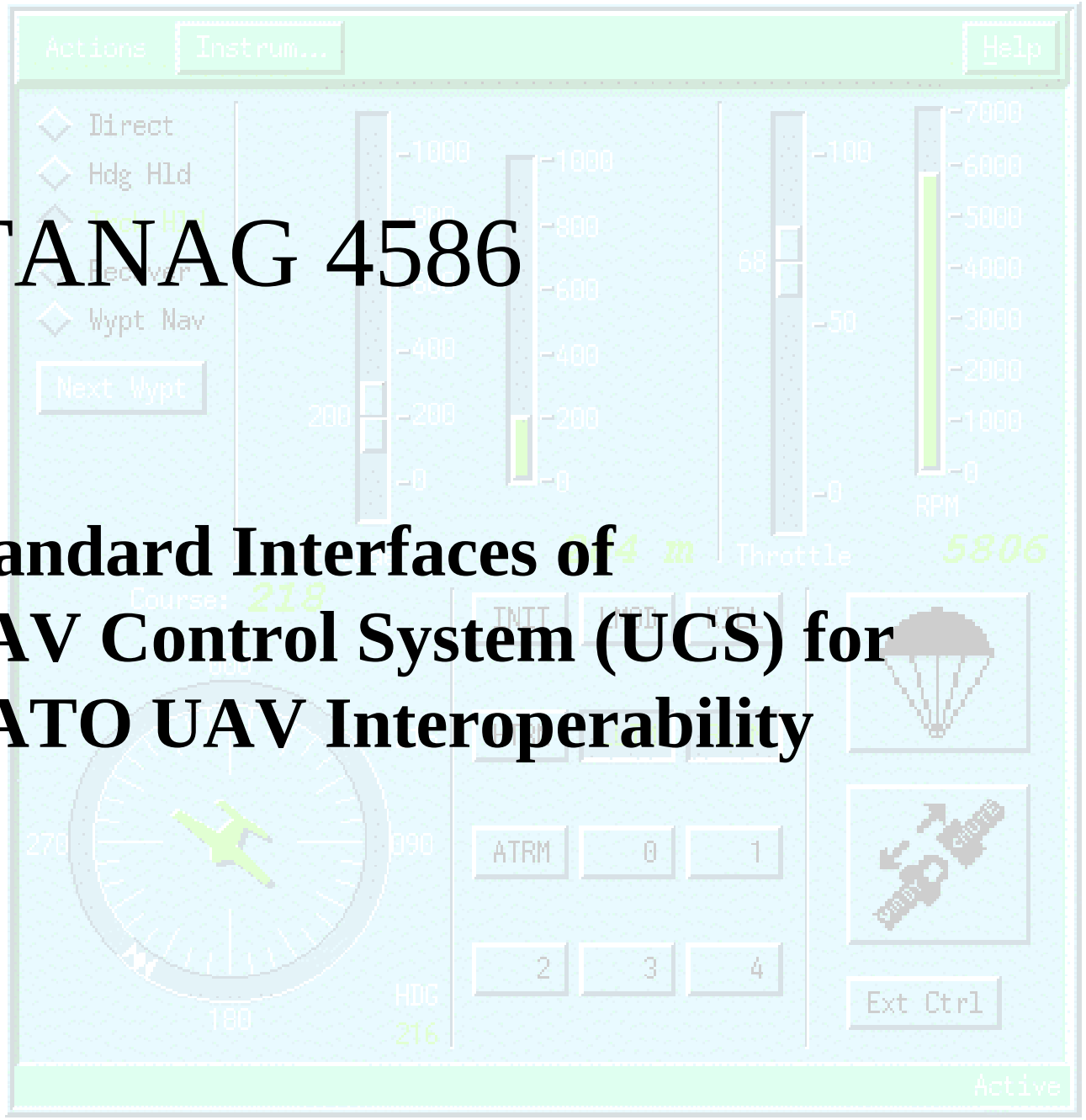
Definition Phase Only

Communications	C2	Sensors
Acquire and Integrate	**Establish PMO/Configuration Management Facility** **ISTAR CMF** **PMO** **PMPR (36 pers)** 	**Tactical UAV Sensors**  **Weapon Locating Sensors**
High Capacity Data Radio (HCDR)		**Enhancements to EW Sensors.**
Tactical Common Datalink (TCDL)	**Acquire Risk Reduction Units**	**Enhance Existing Sensors**

Project Schedule



STANAG 4586

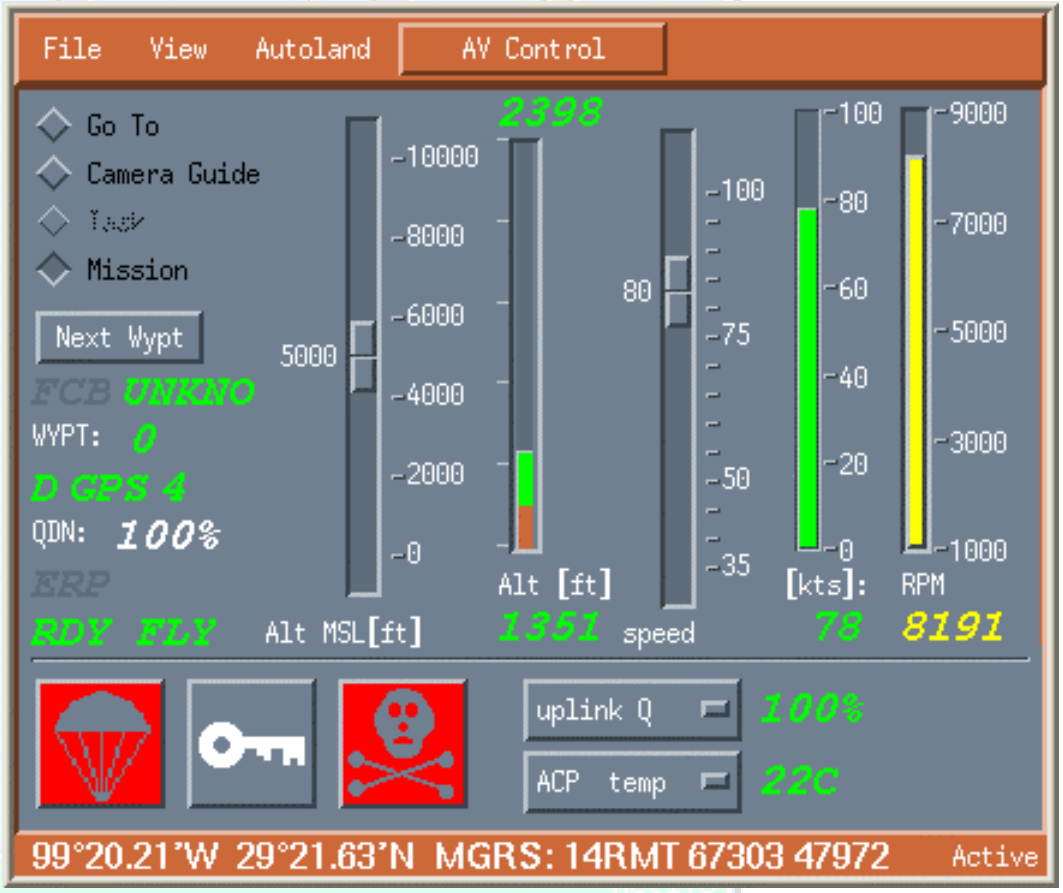


Standard Interfaces of UAV Control System (UCS) for NATO UAV Interoperability

Canadian International Technology Demonstration Program (ITDP)

STANAG 4586

VCS Vehicle Control Panel



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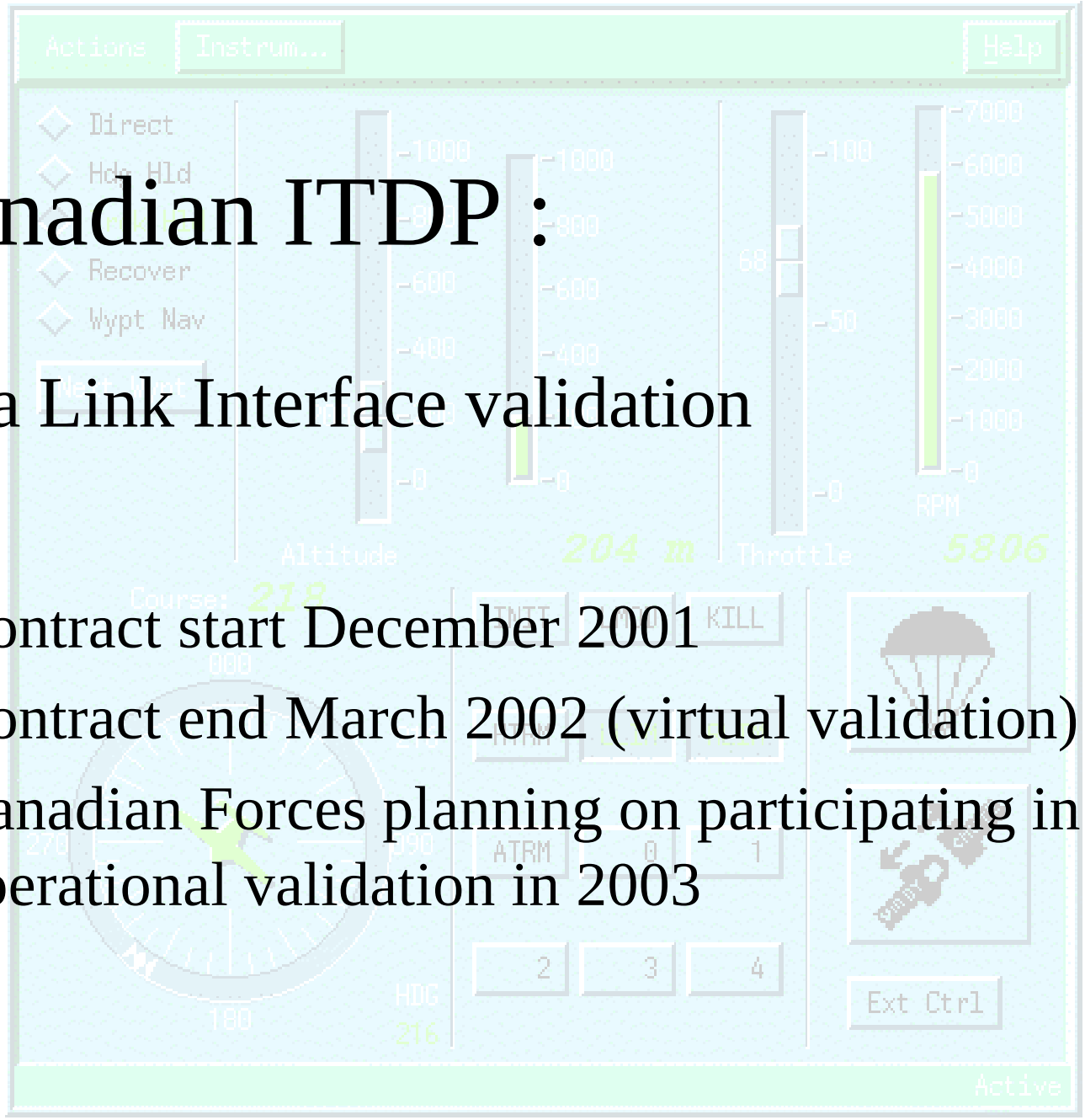
Canadian ITDP :

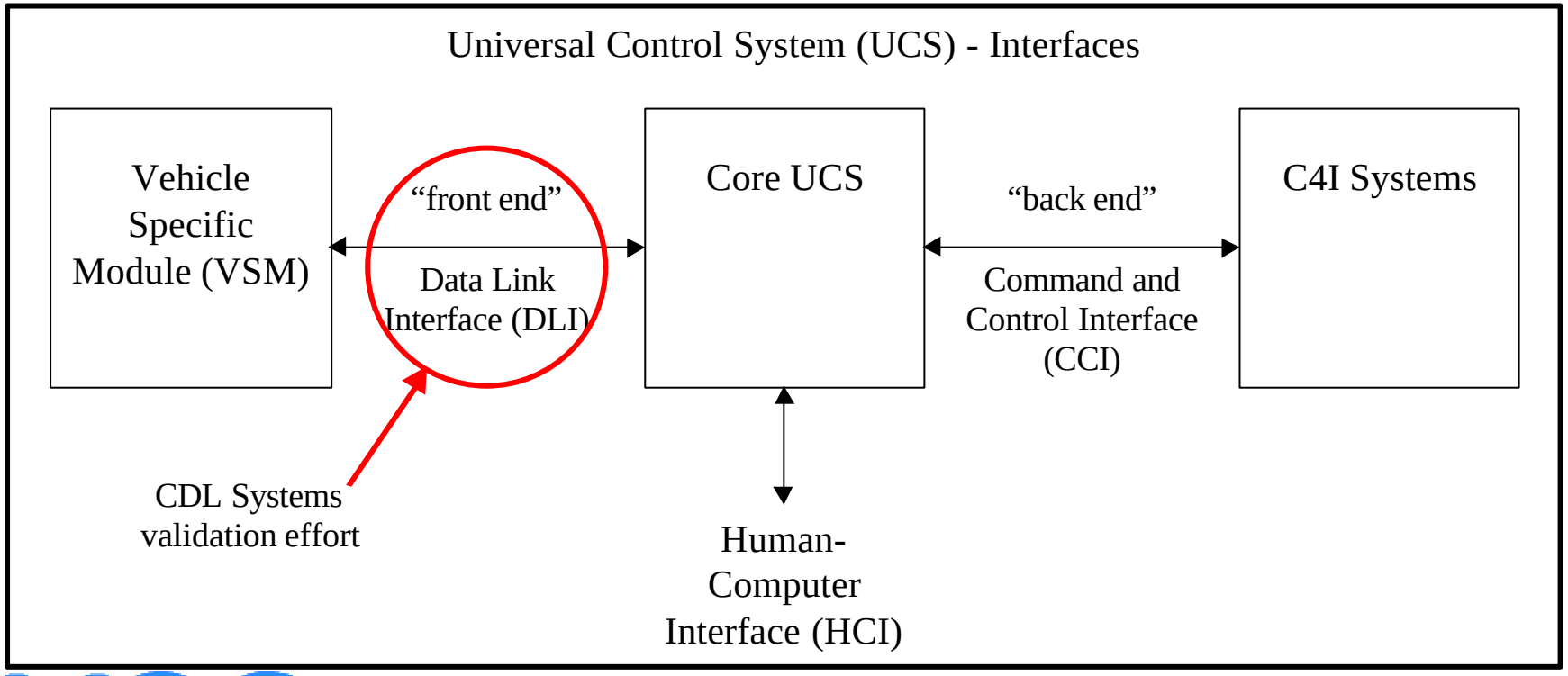
Data Link Interface validation



- Contract start December 2001
- Contract end March 2002 (virtual validation)
- Canadian Forces planning on participating in US operational validation in 2003

Canadian ITDP

CDL Systems Ltd Calgary



VCS CDL SYSTEMS

Vehicle Specific Module

AAI Corp Shadow 200 (US Army TUAV)

Bombardier CL-327 Guardian

EX ROBUST RAM

Flights 12 - 24 April 02
Western Canada

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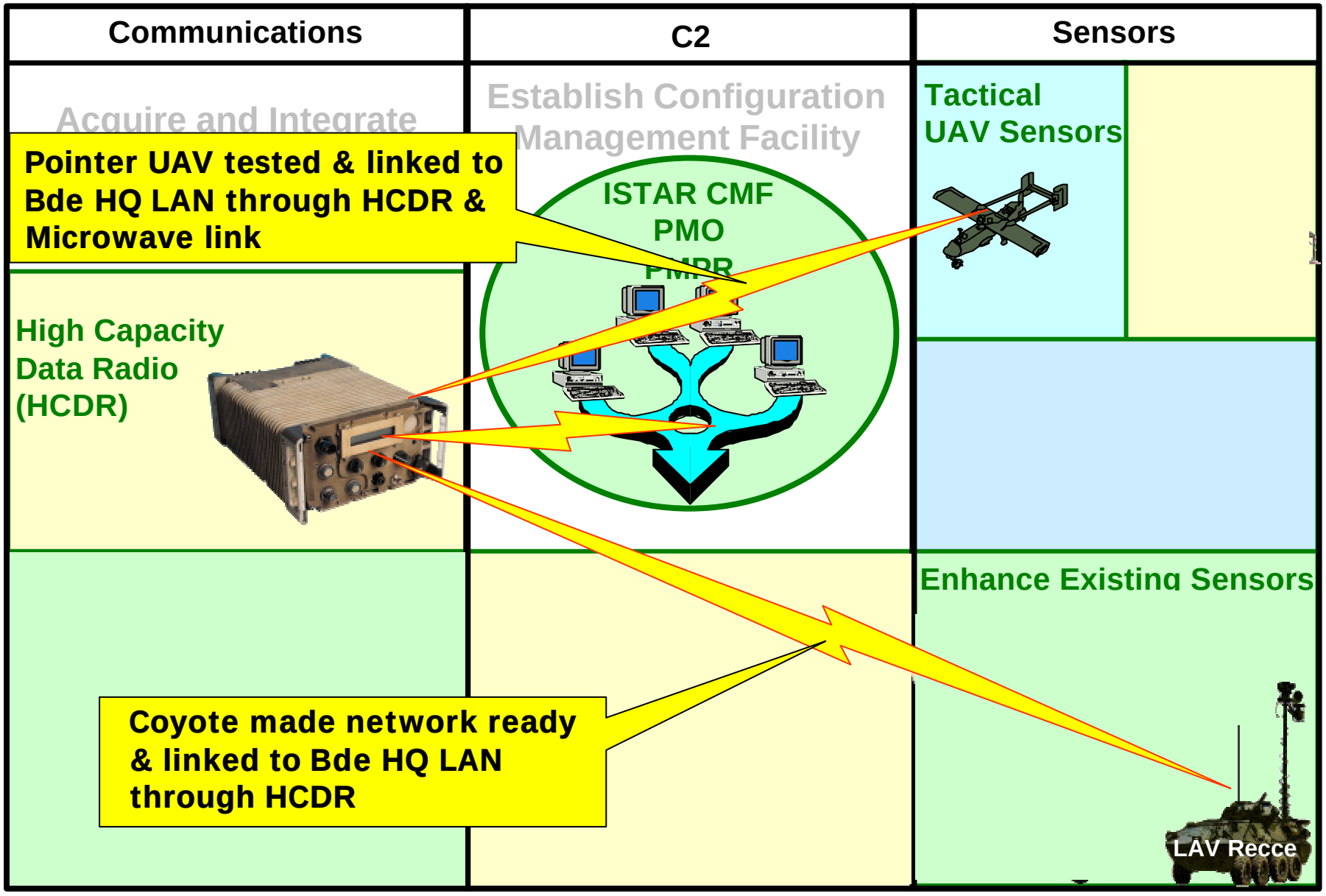
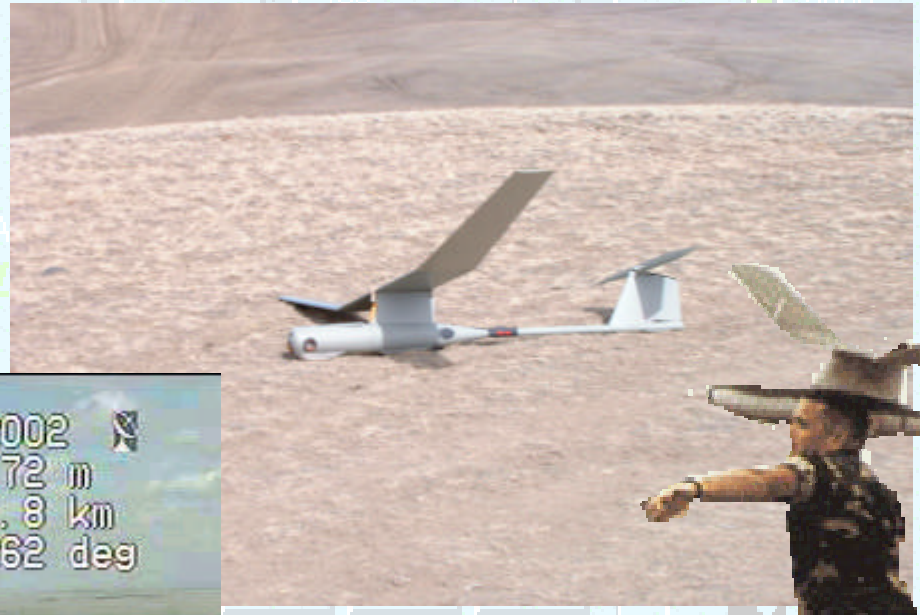
Ex Robust Ram - ISTAR Results



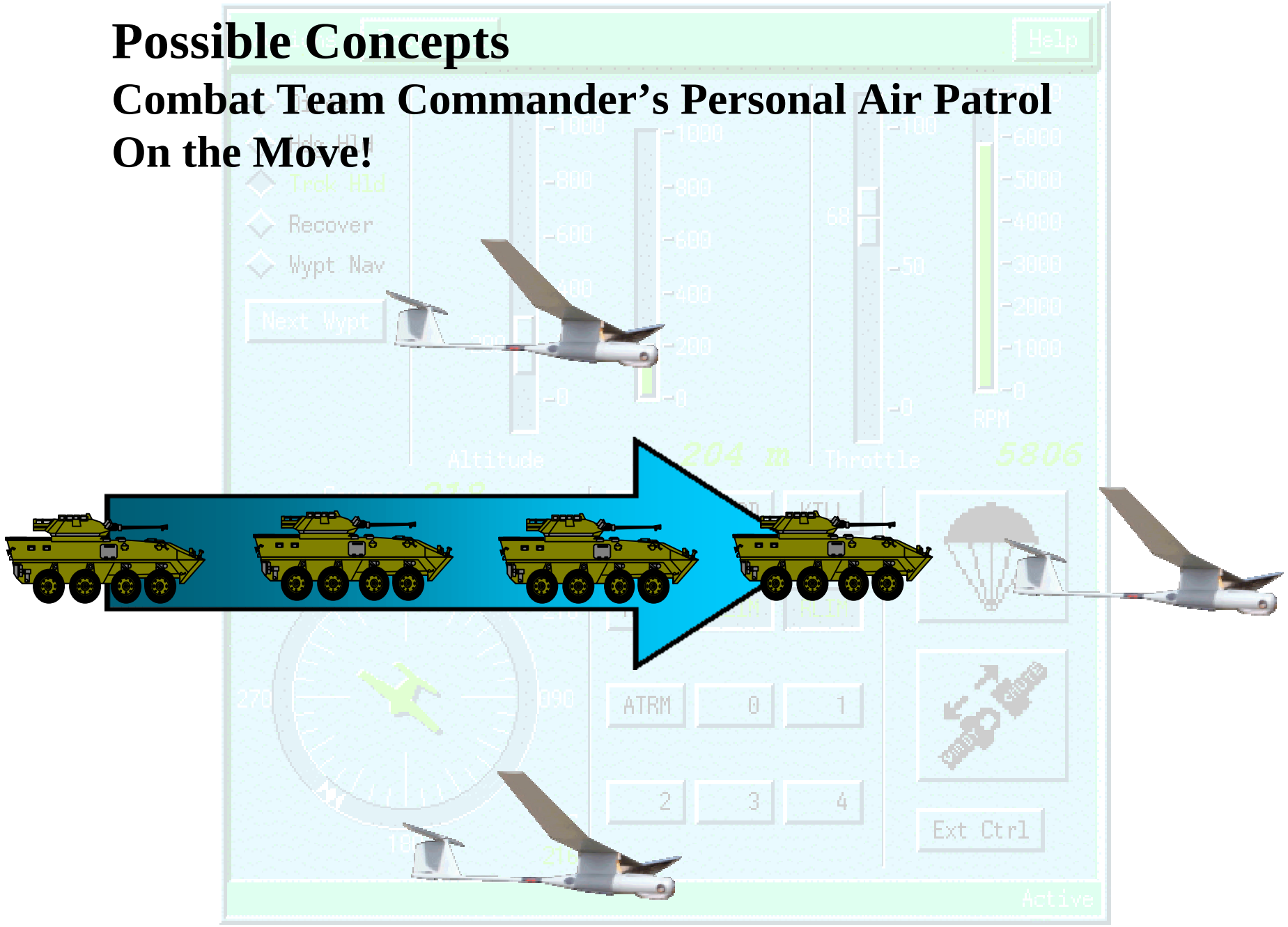
Status - Sub-Tactical UAV

- Pointer UAV is excellent. Easy to operate, quick response (5 minutes between flights) and well suited to Recce Sqn tasks. Despite high winds (35 kts +)…Pointer could always fly … always extend the horizon of forward troops such as Coyote!



Possible Concepts

Combat Team Commander's Personal Air Patrol On the Move!



Canadian Forces Project Land Force ISTAR Contacts

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